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REMARKS

Claim 23 has been added herein. Claims 1-23 will be pending in this application after entry of this amendment.

Response to Rejections under 35 USC §103

Claim 1

Claim 1 is directed to an air induction system for an engine to receive intake air, remove contaminants from the intake air, and provide the intake air for delivery to the engine. The system comprises:

a housing having a hollow interior with at least one entryway for receiving intake air into the housing, a contaminant separator for removing contaminants from the air, and an exit for discharge of air from the housing;

a duct positioned adjacent the exit of the housing to receive intake air therefrom for delivering the air to said engine, the duct having an inside defining an internal flow path for intake air and an outside; and

a seal positioned between the housing and the duct for preventing passage of air therethrough;

wherein the seal is disposed between the outside of the duct and the housing such that the seal is not exposed to air flowing in the internal flow path of the duct.

Claim 1 stands rejected as unpatentable over U.S. Patent No. 3,449,891 (Shohet) in view of either U.S. Patent No. 4,704,143 (Percy) or U.S. Patent Application Publication No. 2005/0126137 (Wang). Applicants respectfully disagree with these rejections because the prior art fails to show or suggest the claimed air induction system, and in particular fails to show or suggest the system having the seal disposed between the

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outside of the duct and the housing such that the seal is not exposed to air flowing in the internal flow path of the duct.

Shohet shows a particle separator assembly (24) which is mounted to a helicopter. As shown in Fig. 4, an exit end (114) of the assembly is positioned to extend into the front or mouth of the engine inlet ducting (112). A seal member (118) is mounted on the ducting (112) in sealing engagement with exit end (114). As can be seen in Fig. 4, the seal member (118) is mounted on the inside or in the mouth of the ducting (112).

As conceded by the Examiner, Shohet does not disclose a seal disposed on the outside of the duct such that the seal is not exposed to air flowing in the internal flow path of the duct as required by claim 1. However, the Examiner asserts that it would have been obvious to combine Shohet with Percy or Wang. These rejections are in error for several reasons.

Shohet in combination with Wang

Assuming arguendo that Wang is both prior art and analogous art, Wang does not show a seal disposed on the outside of a duct such that the seal is not exposed to air flowing in the internal flow path of the duct. As shown in Fig. 9, Wang discloses a securing seat for a filtering cylinder 10 of a dust collector. The securing seat structure includes a circular binding mount 60 and a binding belt 70 for mounting the binding mount. The binding mount 60 includes an L-shaped holding plate 61. As shown in Figs. 8 and 9, the holding plate 61 is located inward of an inner circumference of the filtering cylinder 10. Accordingly, the binding mount 60 would clearly be exposed to air flowing into the cylinder 10. Thus, Wang does not show or suggest a seal disposed on the outside of a duct such that the seal is not exposed to air flowing in the internal flow path of the duct as recited in claim 1.

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Since neither Shohet nor Wang disclose a seal that is not exposed to air flowing in the internal flow path of the duct, a combination of these references likewise fails to disclose such a feature. Accordingly, claim 1 is nonobvious and patentable over Shohet and Wang.

Shohet in combination with Percy

Again assuming arguendo that Percy is analogous art, Percy also does not show a seal disposed on the outside of a duct such that the seal is not exposed to air flowing in the internal flow path of the duct. As shown in Figs. 1 and 4, Percy discloses a multistage micron air filter for placing between a conventional air filter and a vehicle engine. The filter includes a series of abutting filter elements 8, 9, 10 varying in porosity from the most coarse to the finest in the direction of airflow through filter 7. The filter elements 8, 9, 10 are releasably secured in a housing 1 having hinged cover 11. The hinged cover includes "a compressible gasket 12, which when locked closely abuts the edges of the filter elements and prevents unfiltered air from passing around the filters."

Column 4, lines 10-14. Emphasis added. Thus, the gasket 12 is directly contacted by air flowing through the filter. Thus, Percy does not show or suggest a seal disposed on the outside of a duct such that the seal is not exposed to air flowing in the internal flow path of the duct as recited in claim 1.

Since neither Shohet nor Percy disclose a seal that is not exposed to air flowing in the internal flow path of the duct, a combination of these references likewise fails to disclose such a feature. Accordingly, claim 1 is nonobvious and patentable over Shohet and Percy.

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Claims 2-16 depend from claim 1 and are patentable over the combination of Shohet and Wang, and the combination of Shohet and Percy for at least the same reasons as claim 1.

Claim 5

Claim 5 depends from claim 1 and recites that the housing further comprises a nacelle and a frame at a back end of the nacelle. The frame has an opening therein comprising the exit, and a front of the duct is received through the opening. This feature is also not shown by either reference. As shown in Figs. 4 and 7 of Shohet, the exit end (114) of the separator assembly is positioned to extend into the front of the engine inlet ducting (112). Thus, Shohet discloses the opposite of the claimed arrangement. Wang and Percy also fail to show or suggest this feature.

Claim 13

Claim 13, which depends indirectly from claim 1, recites that the system further comprises a rod which secures the nacelle at the open position so that it will not inadvertently move. One advantage of the claimed system is its accessibility, which is important during maintenance. The claimed nacelle is hinged for swinging movement to permit unhindered access. The rod guides movement of the nacelle and secures the nacelle at an open position so that it will not inadvertently move. This rod feature and the further features of claims 14-16 are not shown by the cited references.

The Office action states that Shohet discloses "a rod (252) securing the nacelle wherein the first end secured to the frame: being slidably movable in a slot attached to the frame" Shohet actually shows a bypass door (250) arranged like a Venetian blind (Fig. 15). Each panel (250a) is pivotally

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movable and connected by a pivot rod (252). Bypass door (250) is opened by causing each panel (250a) to pivot about rod (252) by action of a rack (254) and pinion (256). Col. 8, lines 56-59. The rod (252) clearly does not secure a nacelle at the open position, as claimed in claim 13. Nor does Shohet's door have the features claimed in claims 14-16. Accordingly, these claims are submitted as patentable for these additional reasons.

Claim 17

Claim 17 recites, among other features, that the seal is not exposed to air flowing in the internal flow path and permits relative movement between the duct and the assembly in any direction while maintaining a seal between the duct and the assembly. None of the references discloses this element of the claim.

To the extent claim 17 recites the same features as claim 1, claim 17 is submitted as patentable over Shohet in combination with Wang, and Shohet in combination with Percy for the same reasons as claim 1.

Moreover, Shohet states that his seal permits "either axial or circumferential relative motion" between the separator assembly (24) and the engine (20). Column 6, lines 35-37. The claimed seal allows movement in any direction, meaning axially, circumferentially and radially. Clearly, Shohet does not disclose or suggest movement in any direction. Shohet only discloses more limited axial or circumferential motion.

The claimed construction is advantageous, for among other reasons, because the seal does not form a portion of the surface exposed to the airstream. This construction enables several consequent advantages. Because the seal is not exposed to high pressures, it can be more lightweight and flexible. (See Paragraph 33). In one embodiment shown in the specification,

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the seal permits relative movement between the duct 28 and the nacelle 26 without contact therebetween, thereby precluding the possibility of damage and maintaining the airtight seal between the duct and nacelle. Additional length in the seal may be included in some embodiments to create a slack or "baggy" portion which further facilitates relative movement. (See Paragraph 34 of the application).

Claim 17 cannot be obvious in view of Shohet and Wang or Percy if none of these references disclose one or more of the claimed elements. Accordingly, applicants respectfully request allowance of claim 17 and its dependent claims 18-22.

NEW CLAIM**Claim 23**

New claim 23 is directed to an air induction system for an aircraft engine to remove contaminants from intake air and deliver the air to the engine. The system comprises:

a nacelle comprising a housing having outer sides and a hollow interior, at least one side having an opening with a filter panel mounted therein for receiving intake air into the housing, an exit opening located in the housing for discharging air received into the housing through the filter panel toward the engine, a flange projecting axially from the housing and extending around the exit opening in the housing;

a transition duct for directing intake air exiting the exit opening of the housing toward the engine, the duct being attached to and support by the engine, a portion of the duct being positioned through the exit opening in the housing and suspended within the opening, an outer surface of the duct being spaced from an edge of the exit opening so that the duct can move conjointly with the engine and with respect to the nacelle without the duct engaging the housing of the nacelle, the

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portion of the duct received in the housing having a bell-mouth shaped end for receiving intake air; and

a flexible and resilient seal positioned between the housing of the nacelle and the duct for preventing entry of unfiltered air through the outer surface of the duct and the edge of the exit opening, the seal extending around the outer surface of the duct such that the seal is not exposed to air flowing in the flow path inside the duct, the seal being formed from an elastic material for permitting relative movement between the duct and the housing of the nacelle while maintaining an airtight seal between the duct and the housing, the seal being stretchable to about twice its unloaded length without damaging the seal, the seal including a slack portion equal to about twice the length required for the seal.

New claim 23 is submitted as patentable over the references of record including Shohet in combination with Percy, and Shohet in combination with Wang. In particular, the cited prior art references fail to show or suggest an air induction system including 1) a transition duct with a portion of the duct positioned through the exit opening in a housing of a nacelle and suspended within the opening, 2) the portion of the duct received in the housing having a bell-mouth shaped end for receiving intake air, 3) a flexible and resilient seal extending around the outer surface of the duct such that the seal is not exposed to air flowing in the flow path inside the duct, 4) the seal being stretchable to about twice its unloaded length without damaging the seal, and 5) the seal including a slack portion equal to about twice the length required for the seal. Accordingly, new claim 23 is submitted to be patentable over the references of record.

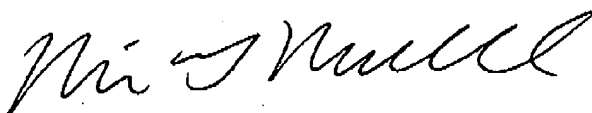
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CONCLUSION

In view of the foregoing, reconsideration and allowance of the application is respectfully requested. The undersigned requests a telephone call from the Examiner if this would expedite allowance of the application.

The Commissioner is hereby authorized to charge Deposit Account No. 19-1345 for one additional claim in the amount of \$50. The Commissioner is also authorized to charge any under payment or credit any over payment to Deposit Account No. 19-1345.

Respectfully submitted,



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